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Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

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Item 2 (e) of the provisional agenda
Explosives and related matters: miscellaneous

Classification of Ammunition, Smoke, containing titanium tetrachloride

Transmitted by the expert from Austria[1]

Introduction

1. With the introduction of N.O.S entries for TOXIC BY INHALATION substances and the identification in the dangerous goods list of substances which are toxic by inhalation (Special Provision 354), the classification of UN 1838 TITANIUM TETRACHLORIDE was changed from class 8 to class 6.1. There was no change regarding the entries for "Ammunition, Smoke", although titanium tetrachloride is referred to as a smoke-producing agent.

2. There are three possible entries for Ammunition, Smoke:

UN 0015 AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge, containing corrosive substances, 1.2G;

UN 0016 AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge, containing corrosive substances, 1.3G;

UN 0303 AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge, containing corrosive substances, 1.4G.

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

3. In Appendix B, Glossary of terms, the term "AMMUNITION, SMOKE" is described as follows:

"AMMUNITION, SMOKE

Ammunition containing smoke-producing substance such as chlorosulphonic acid mixture, **titanium tetrachloride** or white phosphorus; or smoke-producing pyrotechnic composition based on hexachloroethane or red phosphorus. Except when the substance is an explosive per se, the ammunition also contains one or more of the following: a propelling charge with primer and igniter charge; a fuze with burster or expelling charge. The term includes grenades, smoke but excludes SIGNALS, SMOKE which are listed separately. The term includes:

AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge;

AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge.".

4. While some other toxic substances in ammunition will react during the explosion, the titanium tetrachloride is released as the smoke-producing substance. Toxicity will only be reduced after reaction with humidity from the air. In dry air the substance is rather stable and the amount might be about 1 kg per grenade. It is not impossible that this liquid substance be released from the article if it is damaged.

5. UN0020 is intended for AMMUNITION, TOXIC but with the meaning that the intention is to kill due to the toxic effect of the agent and therefore the transport of this ammunition is forbidden.

So the most similar entries are the entries for AMMUNITION, TEAR-PRODUCING (UN 0018, UN 0019, UN 0301) to which subsidiary risks 6.1 and 8 are assigned.

The simplest solution to identify the toxicity hazard in the classification of Ammunition, smoke when titanium tetrachloride is the smoke producing agent would be to mention this hazard in special provision 204.

Proposal

6. Amend special provision 204 in Chapter 3.3 to read as follows:

204 Articles containing smoke-producing substance(s) corrosive according to the criteria for Class 8 shall be labelled with a "CORROSIVE" subsidiary risk label (Model No 8, see 5.2.2.2.2).

Articles containing smoke-producing substance(s) toxic according to the criteria for Class 6.1 shall be labelled with a "TOXIC" subsidiary risk label (Model No 6.1, see 5.2.2.2.2).

Justification

7. This classification provides for better hazard communication for ammunition smoke with titanium tetrachloride.